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ABSTRACT

The concept of creativity is present in the thinking of all cultures. The idea of bringing new order out of non-order and new form out of the formless is basic to the concept of creativity. Despite the efforts of numerous researchers, defining giftedness or creativity appears to be a timeless problem. Presently there is still no universally accepted definition of giftedness and a real need to adequately define and identify the gifted or creative child is apparent. In 1969, Congress passed a bill to provide better identification methods and educational programs for the gifted child. The identification of the gifted child is all important because it is from such talent that we draw statesmen, writers, technicians, scientists, and future leaders. The present paper reviews some of the attempts at defining giftedness and creativity. The need for considering creativity as a process is discussed and the implication for assessing creativity or giftedness explored. A conceptual model for the identification of the gifted or creative child, that includes the multi-dimensional evaluation of intelligence, creativity test scores and creative production is discussed. (Author)

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Identifying Gifted and Creative School Children:[1] Toward a Multiple Model of Assessment

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Presently in the United States there is a giant ecological movement. Industries are being urged not to dump waste in lakes and streams. Citizens are being urged not to litter, to plant trees, and to recycle paper. We're also urged to save gas, to conserve electricity and protect our natural resources. Like our natural resources, the talents of the gifted and creative deserve special attention.

Until recently the gifted child had to fend for himself. The reason for this was the subtle and sometimes not so subtle philosophy that his potential would be developed without any special provisions being made either by the school, his parents or society. Indeed, it seems at times as if parents, school and society have actively plotted against the gifted or creative individual. As White and Williams (1965) put it: "Vast segments of our social order, especially our schools, are structured to legislate against and penalize the creative individual. Conformity to standards and ideals, rules and methods, can strangle the very life from creative talent. It is paradoxical - the one student who seems most capable of coping with our age of revolutions - the creative youth, ... is our pedagological misfit (p. 281)."

As Laming (1973) pointed out, we are a society that is dependent upon intelligent leadership which must be developed from the ranks of the people;

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therefore, we must be certain that each gifted child is identified at a fairly early age in order that his talents may later be realized. Laming also pointed out that we must educate the public that giftedness in children must be cultivated, not stifled. Certainly progress is being made in this area. According to Barbe (1965) we have evolved from talking about the gifted to doing something for him since the launching of Russia's Sputnik.

In 1969, the United States Congress passed a bill to provide for better identification methods and educational programs for the gifted child. One continuing problem concerning the identification of the gifted or creative child is the problem of defining operationally the concepts of "gifted" or "creative." Torrence (1965) has indicated that there have been a great many difficulties in finding a way to conceptualize the various kinds of mental abilities involved. One of the problems in regard to the identification of the gifted or creative individual is exactly what to look for in the assessment process. In attempting to identify the creative individual, should we focus on various characteristics that we know are common to the creative person, or should we look at the various products that the creative individual produces? There are many who would argue that rather than creativity being unique to a person or being based solely upon the creative output or product, that creativity is really a process.

The Problem of Confused Terminology

At the present time there is a great deal of confusion in defining the term "gifted child." Most of this confusion stems from the criteria which have been used by various researchers in defining their subject population. Various criteria which have been used to measure giftedness include intelligence

test scores, achievement test scores, grades in school, professions which require creative ability, and identifying personality traits and habits known to be found in gifted people. Giftedness may be defined in various narrow restrictive terms, or in broad global terms. Table 1 indicates the various criteria which researchers have employed to measure giftedness.

Table One Here

A child may be gifted in one area, but not in another. Children demonstrate their giftedness in a variety of ways. Anastasia (1958) suggested that the conflicting conclusions reached in some of the studies may be resolved when it is recognized that there are or may be several varieties of giftedness which differ from each other in many ways. Taylor (1968) argued that the term gifted is an adjective that can be used to cover 8 to 10 broad or high-level talents such as high intelligence, creative talents, planning talents, wisdom or decision-making abilities, and forecasting talents of several varieties. Taylor stated that these abilities can be identified through testing and can also be subdivided into other specific high-level talents. Lucito (1963) divided the definitions of giftedness into five classes. The first were ex-post-facto definitions (for example, the gifted were those who had already achieved outstanding prominence in one of the professions.) The second were IQ definitions; gifted children were defined as those who scored at or above some point on an IQ scale. (Terman, 1925, 1954, 1959). A third class of social definitions was developed when the IQ criterion was dropped from some definitions of giftedness, and the term was broadened to include people who excelled in such areas as art and

TABLE 1

Criteria Used To Measure Giftedness

Criteria	Researcher	Measurements	Findings
Eminent deceased adults	Galton, 1914	biographical study	Mental ability is inherited.
1,000 most eminent men of science	Cattell, 1917	rank ordering by colleagues	Both environment and heredity contribute to giftedness.
301 Eminent men and women born between 1450-1850	Cox, 1926	histriometry method (heredity IQ ratings, and environment)	Both nature and nurture foster eminence. Eminence is characterized by high IQ, persistence, and confidence.
140 Stanford-Binet IQ or 135 IQ on Terman Group Test	Terman, 1925	Stanford-Binet IQ, Stanford Achievement Test, interest, reading, general information tests, Home and School Information Blank, 37 anthropometric measurements, and longitudinal study	The gifted are superior in problem solving, organizing, and abstract thinking. They have more gifted siblings, fathers above average in occupational status, better physique and health than average children. Their interests are many-sided and spontaneous.
180 Stanford-Binet IQ	Hollingworth, 1942	Stanford-Binet, and longitudinal study.	Highly gifted walk, talk, and read early, have educational, personal, and social adjustment problems, a superior learning capacity, good general health and physique.
Parental loss WISC testing	Albert, 1971	Compared Cox's (1926) 300 geniuses and Hollingworth's (1942) Ss with 19 children with IQ's 110-190.	Parent-child relationships contribute to cognitive giftedness and creativity. Children with IQ's of 155 or above should be called exceptionally gifted.

TABLE 1 Cont.

Criteria	Researcher	Measurements	Findings
Intelligence and creativity	Getzels & Jackson, 1958, 1962	Henmon-Nelson or Binet IQ test, five measures of creativity	Despite a mean difference of 23 IQ points (high IQ= 150 and creative=127) the groups were equally superior on math and achievement tests. Teachers preferred the high IQ student.
Entire sixth grade population of a school district	Flescher, 1963	creative aptitude tests, IQ test (CTMM), two anxiety inventories, and an achievement test.	IQ made a significant difference in all areas of academic performance, creativity made none. There was a lack of validity between creativity subtests.
Children studying at an art conservatory	Westland, 1969	intelligence tests, interview, musical ability (teacher evaluation)	Students exhibited more psychoneurotic symptoms than secondary pupils. Boys were very sensitive, girls very productive.
Summer workshop for intellectually superior children.	Pasternak & Silvey, 1969	WISC or Binet IQ over 130, counselor nomination for leadership abilities	Highly gifted most frequently chosen over moderately gifted as leaders.
Women who won National Merit Scholarship (1956-1960)	Watley & Kaplan, 1971	Follow-up study to determine marriage and career plans	Ss seeking immediate career scored higher on scholastic ability tests than those delaying or not planning career.
child's attendence in a laboratory school for gifted	Gowan, 1971a	Parental questionaire, staff identification as exhibiting high or low creative behavior	Highly creative Ss had more early enrichment and stimulation.

TABLE 1 Cont.

Criteria	Researcher	Measurements	Findings
Delinquent children	Gath, 1971	IQ tests, delinquency records of bright and average children	Bright children made first court appearance at a later age, and were treated more leniently by courts.
Bachelor's Degree Member of Mensa (IQ in upper 2% of U.S. population).	Groth, 1971	questionaire mailed to Ss	Warmth from mother is important for inspiring achievement in males; warmth from both parents important for female achievement.
Creativity to social class and race	Smith, 1965	giftedness = IQ above 120, Minnesota Tests of Creative Thinking.	Gifted Ss exceeded normals on 8 of 14 verbal creativity subtests. White Ss scored better on creativity tests than Negroes. No significant differences between lower and middle class Negroes on creativity measures.

music. These subjects were termed "talented" (DeHaan and Havighurst, 1961; Witty 1962). A fourth group of researchers have used percentage definitions, whereby as many as the upper 15 to 20% of the secondary school population - or as few as the upper 1 to 3% were considered gifted. The fifth class, creativity definitions, was stimulated by Guilford's factor analytic studies (1959, 1960, 1967). Other pioneers (Getzels and Jackson, 1958, 1962; Gallan, 1971; Torrence, 1970) have used creativity as one of the criteria in their definition of giftedness.

Formerly the term "gifted" merely described children who scored high on the IQ test. Now the concept of giftedness has been expanded to include the creative child. Gallan (1971) has defined the gifted child as one who has the potential to develop creativity. Isaacs (1971) felt that the gifted child demonstrated or else had potential for superior originality, creativity, self-sufficiency, and mastery of knowledge. Lucito (1963) also emphasized potential intellectual abilities and a high ideation level in both productive and evaluative thinking. He stated that the gifted were the future problem solvers, innovators, and evaluators of the culture (if adequate educational opportunities were provided).

Realizing that "intellecutal and creative talent can not survive educational neglect and apathy (p. 3)," the Congress of the United States passed the Elementary and Secondary Education Amendments of 1969, section 806, "Provisions Related to Gifted and Talented Children." Gifted Children were defined as having outstanding intellecutal ability and/or creative talent. This report was very disgruntling. Many existing problems were brought to the surface. To date, programs for the gifted have had a very

low priority at Federal, State, and most local levels. Funding priorities, crisis concerns, and lack of personnel cause programs for the gifted to be miniscule or theoretical. Only a small percentage of the gifted are actually served by existing programs. Finally,"Education of the Gifted and Talented: Report to the Congress of the United States by the U.S. Commissioner of Education (1971)," stated that the identification of the gifted is hampered not only by costs of appropriate testing, but also from apathy and hostility among teachers, administrators, guidance counselors, and psychologists.

As the government document pointed out, there is a serious need for better identification methods. Ward (1962) has studied the problems of identifying gifted children and has recommended that the following types of data be used as indicators of giftedness: individual IQ and group IQ tests, teacher judgment, school records (including achievement test scores and teacher grades), appraisal of social and emotional maturity and adjustment, parental interviews, and pupil ambition and drive. Certainly creativity tests and observational methods should be added to Ward's list of indicators.

Schermann (1966) recommended that children should be identified as gifted through observational methods in the day to day classroom setting. She does not discount the use of creativity and intelligence tests, but avoids the emphasis being placed on these formal measurements. She suggested that if the classroom is sufficiently open, the children will have the opportunity of displaying exceptional skills and abilities.

Studies of gifted children have centered mainly upon the late elementary and secondary school years (Schermann, 1966). This may mean that in some instances that much precious time has been lost. The role of the early

childhood years in relation to the development of skill is not yet fully understood, and if the researcher believed in a fixed and predetermined type of intelligence, there are few ramifications, because this type of giftedness would still occur. However, if early childhood experience does play a significant role in determining the realization of potential, then early identification is very important (Schermann, 1966). Schermann stated that another problem in the identification process relates to whether or not there are critical periods in the development of giftedness, because what constitutes exceptionality at the five year level is certainly different from superior performance at the ten or fifteen year level. The preschooler at the preconceptual state is interested in the here and now. Schermann questions whether one form of giftedness is to be seen as outstanding performance at this level of thought or as an early entry into the stage of concrete operations. This question is also applicable for the child who is moving from concrete operations to logical thought where he deals with propositions and ideas.

Many researchers have published check lists of observable behaviors which gifted children demonstrate (Abraham, 1958; Barbe, 1965; Bradley, 1970; Feldhusen, 1966; Gallagher & Rogge, 1966; Isaacs 1971, Torrance, 1966). Table two outlines some of these characteristics. Table two was constructed to provide an insight into some of the behavior gifted children demonstrate. Tables and lists should be interpreted with care because many of them were constructed from the results of a large number of studies on gifted children which employed different operational definitions (Lucito, 1963). The lists and tables usually present a composite portrait but overlook subgroup differences. Abraham (1958) outlined the limitations of

composite portraiture. This method was designed to point out central tendencies, and to provide a basis for generalization. Gifted children demonstrate a wide range of variability on each trait listed. Abraham stated that examples of almost every type of personality defect, social maladjustment, behavior problem, and physical frailty could be found in the gifted group. However, the incidence of these deviations is, in varying degrees, lower than in the general public.

Table Two Here

Although no universal definition of giftedness exists, the ramifications may not be serious. Durr (1964) contended that the lack of a standardized definition of giftedness may assist the teacher, administrator, or parent whose concerns are immediate and practical. He suggested that the lack of a predetermined, rigid definition can assist those who deal with the gifted because their definition can be altered to fit the exigencies of the situation.

Giftedness can refer to a very narrow range of abilities. However, giftedness should be defined and treated in its broadest sense for two reasons. First, the more children who are identified as gifted, the more special provisions should be made by educators, diagnosticians, and legislators. If a child is not given a chance to participate in an enriched curriculum because he misses the cutoff score by one or two points, and is not given the necessary counseling and guidance to develop his talents and abilities, then we are throwing the baby out with the bath. Secondly, if our nation adheres to the creed that each individual should be allowed to

TABLE 2

Characteristics Ascribed To Gifted Children

Characteristics	Researchers
The gifted are stronger and healthier than average children. They learn to walk, talk, and have fewer physical and sensory defects than their average peers in school. They are ahead of their peers in school.	Bradley & Earp, 1970; Feldhusen, 1966; Miles, 1954; Terman, 1925; Thomas & Crescimbeni, 1966; Witty, 1951.
They are curious, have long memories, and a keen sense of time (keep track of dates).	Barbe, 1965; Feldhusen, 1966; Kirk, 1962; Isaacs, 1971; Jacobs, 1972; Kirk, 1962.
They have many different interests and hobbies.	Feldhusen, 1966; Isaacs, 1971; Lucito, 1963; Telford & Sawrey, 1967; Terman, 1925; Thomas & Crescimbeni, 1966.
The gifted exhibit leadership.	Getzels and Jackson, 1962; Isaacs, 1971; Terman, 1954; Terman & Oden, 1947, 1959; Witty, 1951, 1967.
They have desireable personalities and possess favorable social characteristics.	Abraham, 1958; Anastasiow, 1964; Barbe, 1965; Bradley & Earp, 1970; Garrison & Force, 1965; Telford & Sawrey, 1967; Terman, 1925.
The gifted have many special talents and abilities. They possess a superior intellectual potential and functional ability and/or one or more unique creative abilities in such areas as mathematics, science, mechanics, creative writing, art, music and social leadership.	De Haan & Havighurst, 1961 Feldhusen, 1966; Fliegler & Bish, 1959; Goldberg, 1965; Isaacs, 1971; Passow & Goldberg, 1962; Schermann, 1966; Torrance, 1962a, 1963b, 1965b, 1965c, 1970; Witty, 1940a, 1958, 1967.
They produce work that has freshness, vitality, and uniqueness. They create new ideas, substances, processes, and mechanical devices.	Barbe, 1965; Bradley & Earp, 1970; Getzels & Jackson, 1958, 1962; Golann, 1963; Gowan, 1971a, 1971b, Guilford, 1950, 1962a, 1962b,

TABLE 2 Cont.

Characteristics	Researchers
	1965a, 1966; Isaacs, 1971; Lucito, 1963; Martinson & Seagoe, 1967; Schaeffer & Anastasi, 1968; Torrance, 1962a, 1963a, 1965b, 1966, 1970; Wallach & Kogan, 1965; Ward, 1968; White & Williams, 1965.
The gifted child has unusual abilities in structuring, organizing, integrating, and evaluating ideas (critical thinking).	Barbe, 1965; Bradley & Earp, 1970; Feldhusen, 1966; Guilford, 1966, 1968; Isaacs, 1971; Lucito, 1963; Martinson & Seagoe, 1967; Pegnato & Birch, 1959; Terman, 1925; Terman & Oden, 1947; Torrance, 1963a, 1970; Witty, 1951, 1962a, 1967.

develop to his maximum potential, then it is our obligation to see that each gifted person reaches fruition.

No matter how one defines or measures giftedness, there is an even greater task at hand. This is the paramount task of identifying each gifted child and assisting him in realizing his potential. To settle for less, would be short-changing many children who could contribute meaningfully to our society and ultimately the world.

Toward a Multiple Model of Assessment

As we have indicated earlier, there are many definitions of gifted or creative. In general, almost any definition seems to be incomplete without the inclusion of others. To look at intelligence as the sole criteria of giftedness leaves out the individual who has in the past created useful or worthwhile products, or who has shown evidences of creativity. A definition that includes only the creative process without looking at creative products or intelligence also seems to be somewhat lacking. Rather than looking at the concept of giftedness or talent narrowly, we should perhaps try to develop definitions that would acknowledge the individual differences that researchers in the past have reported. It is quite clear, if we look at the data in Table 1 and Table 2 that giftedness or talent can be conceptualized in at least 3 major, broad areas. The areas are: intelligence, creativity test scores, and creative products. For the most part, intelligence and the subject's ability to do well on creativity tests can be determined through a psychometric assessment procedure. The subject's ability to produce creative products is best measured through observational techniques.

Figure 1 here

FIGURE I

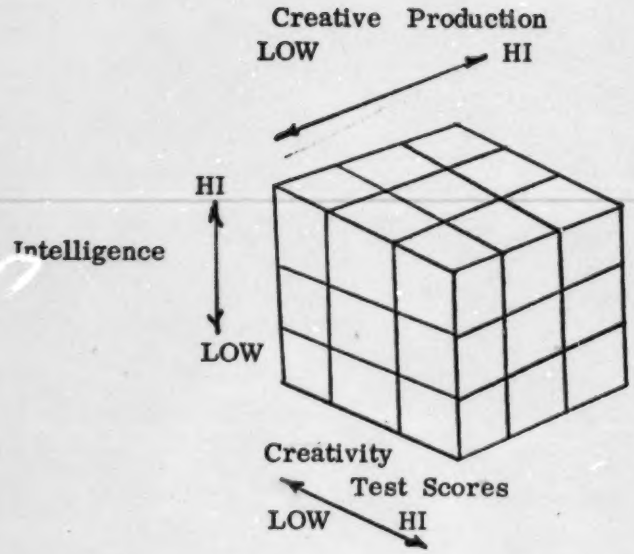
Creative Production
LOW
HI
HI
Intelligence
LOW
Creativity
Test Scores
LOW
HI

Figure 1 presents a three-dimensional model utilizing the three major variables that have been discussed. The three variables have been treated as discrete, rather than continuous, thus yielding a 27-unit cube. In actuality of course the concepts of intelligence, creativity and creative production should be considered to be continuous variables. Table 3 presents a

Table 3 here

hypothetical breakdown of the three variables as they might be applied to the cube. It should be noted that such a model would include all children that are evaluated (everybody will fall somewhere in the multiple system). Such a multiple system of assessment would permit a relative ranking of creative individuals. At one end of the continuum would be individuals who scored high on all three variables, and at the opposite end of the continuum would be individuals who scored low on all three assessment criteria. In this way we would be able to establish cutoff scores, if that is desirable to facilitate educational selection. Furthermore, such an articulation of strengths and relative weakness has implications for educational programming. We may, for example, wish to remediate weaknesses that we have identified in our

TABLE 3

	VARIABLES		
ASSESSED LEVEL	INTELLIGENCE	CREATIVITY TEST SCORES	CREATIVE PRODUCTION
High	___	___	___
Medium	___	___	___
Low	___	___	___

assessment procedure. (If an individual is low on creativity test scores we may wish to include exercises in fluency, remote association, and flexibility in his curriculum). Or, we may choose to maximize the strength of an individual. RAther than remediating his weaknesses, we may try to match individuals up with various programs that would be based on the areas of the individual's strength. Be that as it may, such a multiple model of assessment would permit us to be quite explicit in terms of the kind of individual that we would attempt to set up programs for. By being explicit in the description of the individual and his various characteristics, rational decisions can be made regarding who to include or exclude in programs for the gifted, academically talented or creative individual. By using such a system the criteria would be visible. Not only would the criteria be visible for initial inclusion, but the variables to be measured in the follow-up evaluation are specified. All in all, it seems to present a very workable and theoretically sound evaluation procedure and it is one that could be put into practice in many school districts at the present time.

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